



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2009-0889; Product Identifier 2009-NE-35-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Safran Helicopter Engines, S.A., Turboshift Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to supersede airworthiness directive (AD) 2012-03-11 that applies to all Safran Helicopter Engines, S.A., Arriel 2B and 2B1 turboshaft engines. AD 2012-03-11 requires checking the transmissible torque between the low-pressure (LP) pump impeller and the high-pressure (HP) pump shaft on the HP/LP pump and metering valve assembly, hereafter referred to as the hydro-mechanical metering unit (HMU).

Since we issued AD 2012-03-11, the manufacturer determined that incorporating Modification TU 178 is a more effective method to reduce the risk of uncoupling between the LP fuel pump impeller and the HP fuel pump shaft than the prior Modification TU 147. This proposed AD would require inspection and possible replacement of the HMU. We are proposing this AD to address the unsafe condition on these products.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Safran Helicopter Engines, S.A., 40220 Tarnos, France; phone: (33) 05 59 74 40 00; fax: (33) 05 59 74 45 15. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2009-0889.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2009-0889; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the mandatory continuing airworthiness information, regulatory evaluation, any comments received, and other

information. The address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Robert Green, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7754; fax: 781-238-7199; email: robert.green@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2009-0889; Product Identifier 2009-NE-35-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this NPRM.

### **Discussion**

We issued AD 2012-03-11, Amendment 39-16953 (77 FR 8092, February 14, 2012), “AD 2012-03-11,” for all Turbomeca S.A. Arriel 2B and 2B1 turboshaft engines. AD 2012-03-11 requires checking the transmissible torque between the LP pump impeller and the HP pump shaft on the pre- and post-Modification TU 147 HMUs. AD

2012-03-11 resulted from instances of uncoupling between the LP fuel pump impeller and the HP fuel pump shaft. We issued AD 2012-03-11 to prevent an uncommanded in-flight shutdown, which can result in a forced autorotation landing or accident.

#### **Actions Since AD 2012-03-11 Was Issued**

Since we issued AD 2012-03-11, the manufacturer determined that modification of an engine to incorporate Modification TU 178 is a more effective method to reduce the risk of uncoupling between the LP fuel pump impeller and the HP fuel pump shaft than the prior Modification TU 147. Also since we issued AD 2012-03-11, the European Aviation Safety Agency (EASA) has issued AD 2017-0102, dated June 13, 2017, which requires inspection and possible replacement of the HMU.

#### **Related Service Information under 1 CFR Part 51**

Turbomeca, S.A., has issued Alert Mandatory Service Bulletin (MSB) A292 73 2830, Version B, dated July 10, 2009, and Alert MSB A292 73 2836, Version A, dated August 17, 2010. Turbomeca Alert MSB A292 73 2830, Version B, is used to do the inspection for pre-Modification TU 147 HMUs. Turbomeca Alert MSB A292 73 2836, Version A, is used to do the inspection for HMUs that have incorporated Modification TU 147. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

#### **Other Related Service Information**

Safran Helicopter Engines has issued MSB 292 73 2178, Version B, dated March 23, 2017, introducing an HMU with a reinforced drive link between the LP impeller and fuel pump drive shaft (Modification TU 178). Safran Helicopter Engines has also issued

MSB A292 73 2830, Version C; and A292 73 2836, Version B, both dated April 5, 2017, which exempt HMUs incorporating Modification TU 178 from the inspections previously recommended by Turbomeca.

### **FAA's Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **Proposed AD Requirements**

This proposed AD would require inspection and, depending on the results of the inspection, possible replacement of the HMU. This proposed AD would further require replacement of pre-Modification TU 178 HMUs with an HMU incorporating Modification TU 178 within 2,200 engine flight hours or 72 months, whichever occurs later, after the effective date of this AD.

### **Costs of Compliance**

We estimate that this proposed AD affects 417 engines installed on helicopters of U.S. registry.

We estimate the following costs to comply with this proposed AD:

<b>Estimated costs</b>				
<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Remove and replace the HP/LP fuel pump metering unit	2 work-hours X \$85 per hour = \$170	\$17,400	\$17,570	\$7,326,690

## **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

## **Regulatory Findings**

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national

Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

(1) Is not a “significant regulatory action” under Executive Order 12866,

(2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing airworthiness directive (AD) 2012-03-11, Amendment 39-16953 (77 FR 8092, February 14, 2012), and adding the following new AD:

**Safran Helicopter Engines (Type Certificate previously held by Turbomeca, S.A.):**

Docket No. FAA-2009-0889; Product Identifier 2009-NE-35-AD.

**(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

This AD replaces AD 2012-03-11, Amendment 39-16953 (77 FR 8092, February 14, 2012).

**(c) Applicability**

This AD applies to Safran Helicopter Engines, S.A., Arriel 2B and 2B1 turboshaft engines, except those incorporating Modification TU 178.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7300, Engine Fuel and Control.

**(e) Unsafe Condition**

This AD was prompted by analysis that indicated the modification of an engine to incorporate Modification TU 178 provides a more effective method than Modification TU 147 to reduce the risk of uncoupling between the low-pressure (LP) fuel pump impeller and the high-pressure (HP) fuel pump shaft of the HP/LP pump and hydro-mechanical metering unit (HMU). We are issuing this AD to prevent failure of the HMU. The unsafe condition, if not corrected, could result in failure of the engine, in-flight shutdown, and loss of the helicopter.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.



(1) Check the transmissible torque between the LP fuel pump impeller and the HP fuel pump shaft as follows:

(i) For pre-Modification TU 147 HMUs, check the torque before accumulating 500 engine flight hours (FHs) since March 11, 2010 or before the next flight, whichever occurs later. Use Paragraph 2 of Turbomeca Alert Mandatory Service Bulletin (MSB) A292 73 2830, Version B, dated July 10, 2009 to do the check.

(ii) For HMUs that incorporated Modification TU 147 on or before March 31, 2010, and those HMUs not listed in Figures 2 or 3 of Turbomeca Alert MSB A292 73 2836, Version A, dated August 17, 2010, check the torque before the next flight. Use Paragraph 2 of Turbomeca Alert MSB A292 73 2836, Version A, to do the check.

(2) If the HMU does not pass the torque check, replace the HMU with a post-Modification TU 178 HMU before the next flight.

**(g) Mandatory Terminating Action**

Within 2,200 engine FHs or 72 months after the effective date of this AD, whichever occurs first, replace any pre-Modification TU 178 HMU with a post-Modification TU 178 configuration HMU.

**(h) Installation Prohibition**

After the effective date of this AD, do not install a pre-Modification TU 178 HMU on engines incorporating a post-Modification TU 178 HMU.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, ECO Branch, FAA, may approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(j) Related Information**

(1) For more information about this AD, contact Robert Green, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7754; fax: 781-238-7199; email: robert.green@faa.gov.

(2) Refer to MCAI European Aviation Safety Agency AD 2017-0102, dated June 13, 2017, for more information. You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating it in Docket No. FAA-2009-0889.

(3) For service information identified in this AD, contact Safran Helicopter Engines, S.A., 40220 Tarnos, France; phone: (33) 05 59 74 40 00; fax: (33) 05 59 74 45 15. You may view this referenced service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on September 29, 2017.

Robert J. Ganley,  
Manager, Engine and Propeller Standards Branch,  
Aircraft Certification Service.  
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